Working Group #3: “Mission Implementation”

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Annoted list of topics discussed

- Scattering
  - Considerable science in scattered data (JLB)
  - Can't mitigate scattering (DO)
  - Need to work in a regime where we average over small, time-varying structures (DO)
  - Need to perform a statistical study of smallest source sizes for all science targets (RJM)
  - Resolve in consistencies between Steinberg et al, Reiner et al., Cane et al. (RJM)

- More scattering
  - Can't study radio bursts in detail, like at higher frequencies, because they illuminate all of the corona (plasmasphere at that frequency) (AL)
  - Many types of scattering (JLB)
  - 3-D screen, "lots of reflections" (JLB)
- Timing (phase stability)
  - Don't want to uplink X-band 24 hr/day (RJM)
  - Time accuracy required ~1 microsec (DJ)
  - Reconsider relay bus or couple of microsats to broadcast timing signal
  - Bill Farrell viewgraph = "3 instruments"

- Array geometry/baseline length/orbits
  - Unwin sphere = successively place spacecraft on a sphere at a random location
    - If not constrained to a minimum separation, then there will be an excess of short baselines
    - With a minimum separation constraint, a uniform coverage of the UV plane in all directions is possible
  - Could vary diameter of sphere over time
  - Consider “Unwin cigar” – random locations on a cigar (football) pointed towards the Sun
    - OK for L1, not for L4/L5 (RJM)
    - Might reduce accuracy of rel position determination
  - Downlink rate/distance trade needs study

- Observing strategy
  - Numerous observing schemes possible
    - For example, “follow” type III through frequency
      - A tracking mode
  - Consider downlinking full bandwidth (some fraction of time) and choosing processing windows on the ground
  - need to consider other heliospheric imagers (LaBonte); SIRA is complementary (Desch)

- Interference
  - AKR is a key problem
  - L1 is best to avoid AKR
- Dipoles
  - Looked at U. Berkeley antennas for STEREO/WAVES
    - Advantage over commercial is more customizing
- Magnetopsheric observations
  - Need to review science results carefully/soon

- GI funding
  - Can't fund at the proposal level
  - Can try to get a SIRA specific NASA SR&T Guest Investigator opportunity
- Significant modeling of scattering, magnetosphere, trade space issues to be done ASAP
  - also need to review ISEE-3 and Wind data